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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Paper No. 20

Serial Number: 08/377,450
Filing Date: January 24, 1995
Appellant(s): Hoge et al

Donald J. Featherstone
For Appellants

EXAMINER'S ANSWER

This is in response to Appellants' brief on appeal filed September 25, 1996.

(1) *Status of claims.*

The statement of the status of claims contained in the brief is correct.

(2) *Status of Amendments After Final.*

Appellants' statement of the status of amendments after final rejection contained in the brief is correct.

(3) *Summary of invention.*

The summary of invention contained in the brief is correct.

(4) *Issues.*

Appellants' statement of the issues in the brief is correct.

(5) *Grouping of claims.*

Appellants' brief includes a statement that claims 1, 3-5, 7-9, 11 and 12 stand or fall together.

(6) *Claims appealed.*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(7) *Prior Art of record.*

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

APPELLANTS' ADMITTED PRIOR ART (Page 8, lines 18-27)

4,399,959	GODSOE ET AL	8-1983
4,928,245	MOY ET AL	5-1990
4,991,037	SHIMIZU ET AL	2-1991

(8) *New prior art.*

No new prior art has been applied in this examiner's answer.

(9) *Grounds of rejection.*

The following ground(s) of rejection are applicable to the appealed claims.

Claims 1, 3, 4, 9, 11 and 12 are rejected under 35 U.S.C. § 103 as being unpatentable over Shimizu et al in view of Godsoe et al and further in view of Appellants' admitted prior art as shown on page 8, lines 18-27.

With regard to claims 1, 3, 4, 9, 11 and 12, Shimizu et al shows in Figure 1 a tape loading system including a chassis (1) having a front end portion and a rear end portion; an elevator assembly (9) mounted on the chassis at the front end, the elevator assembly configured to receive a tape cartridge (14) and position the cartridge in a loaded position; and a take-up reel assembly (94,95) coupled to the chassis at the rear end portion. Shimizu et al further shows in Figure 1 the tape cartridge has magnetic recording tape which is wound on a supply reel (38) rotatably mounted within the cartridge and has a leader block (39) attached to one end for use in withdrawing the end from the tape cartridge. Shimizu et al further shows in Figure 1 a supply reel drive assembly (35-37) co-located with the elevator

assembly, the supply reel drive assembly configured to couple with the supply reel of the cartridge and to rotatably drive the supply reel. Shimizu et al further shows in Figure 1 the take-up reel assembly includes a take-up reel (94) and a servomotor (95) coupled to the take-up reel. Shimizu et al does not show a linear threading mechanism or a helical deck. Godsoe et al shows in Figure 1 a linear tape threading system including a substantially linear tape loading path between an elevator assembly (26) and a take-up reel assembly (28) with a movable guide (46) for seizing the tape from the loading path and wrapping the tape around the magnetic head (32); and a raised linear threading mechanism, including a linear bearing (40), a threading arm (42), and a threading cam (31,34), wherein the bearing, the arm, and the cam are operably configured to grasp the leader block of the tape, thread the tape through the tape loading path and couple the leader block to the take-up reel assembly. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the tape loading system of Shimizu et al with the linear tape threading system as taught by Godsoe et al in lieu of the tape threading system as taught by Shimizu et al. The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to provide the tape loading system of Shimizu et al with the linear tape threading system as taught by

Godsoe et al in lieu of the tape threading system as taught by Shimizu et al since they are art recognized equivalent threading systems. Appellants' admitted prior art (Page 8, lines 18-27) teaches that a helical deck with a rotary read/write head is known in a Panasonic Model D350 digital video cassette recorder. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the tape loading system of Shimizu et al in view of Godsoe et al with the helical deck as shown by Appellants' admitted prior art so that the helical deck is mounted on a central portion of the chassis between the elevator assembly and the take-up reel. The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to use the helical deck as taught by Appellants' admitted prior art since it allows tape cartridges written in helical scan format to be read by the tape loading system.

Claims 5, 7 and 8 are rejected under 35 U.S.C. § 103 as being unpatentable over Shimizu et al in view of Godsoe et al and Appellants' admitted prior art as shown on page 8, lines 18-27 and further in view of Moy et al.

With regard to claims 5, 7 and 8, Shimizu et al in view of Godsoe et al and Appellants' admitted prior art show all the features as described, *supra*, except for a plurality of

transports vertically spaced eleven inches on center dimensioned to fit within a rectangular enclosure measuring approximately twelve and one-half inches wide by twenty-six and one-half inches deep and that the front end of the chassis extends seven inches outward from the enclosure to mate with an automated cartridge system. Moy et al shows a Storage Technology Corporation Model 4400 automated cartridge system. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the tape loading system of Shimizu et al in view of Godsoe et al and Appellants' admitted prior art to have the dimensions described above and place it in the automated cartridge system as taught by Moy et al. The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to place the tape loading system of Shimizu et al in view of Godsoe et al and Appellants' admitted prior art in the automated cartridge system of Moy et al in order to increase the memory capacity of the automated cartridge system and the above dimensions would result from modifying the tape loading system of Shimizu et al in view of Godsoe et al and Appellants' admitted prior art to fit in the automated cartridge system of Moy et al.

(10) *New ground of rejection.*

This Examiner's Answer does not contain any new ground of rejection.

(11) *Response to argument.*

Appellants assert on pages 9 and 10:

> "Combining of the motor driven tape transport of Shimizu with the spring web threading system of Godsoe results in the destruction of the intended function of the Shimizu reference. The design and implementation of the complex series of cams and levers of Shimizu will not allow a substitution of a "constant force" spring for the transport drive motor. The substitution of the "constant force" spring and a substantially linear tape path of Godsoe would render the insertion/ejection, pivotally engaging and threading and tape cartridge ejecting structure of the Shimizu reference inoperative, thereby destroying its intended functionality."

The Examiner maintains that providing the tape loading system of Shimizu et al with the linear tape threading system as taught by Godsoe et al would eliminate the need of Shimizu's motor to pivotally engage and thread the leader block from the tape cartridge to the take-up reel. Therefore, the motor of Shimizu et al would open the tape elevator housing to receive the tape cartridge, move the tape elevator housing from the insertion/ejection position to the withdrawal/rewind position, and eject the tape cartridge from the elevator housing, while the linear tape threading system as taught by Godsoe et al would engage and thread the leader block from the tape cartridge to the take-up reel. Viewing the totality of the teachings of these two

references, it is the Examiner's view, that the skilled artisan would have been led to employ the linear tape threading system of Godsoe et al in the tape loading system of Shimizu et al in lieu of the tape threading system as taught by Shimizu et al since they are art recognized equivalent tape threading systems.

Appellants further assert on page 13:

> "The Examiner erroneously argues that "claims 1, 3, 4, 9, 11 and 12 do not even recite the form factor feature and therefore the evidence of commercial success is not seen to be commensurate in scope with the claims." Appellants have repeatedly referred to *form factor* as the physical layout of a tape transport. Thus, as recited in the claims, the helical transport of the invention includes a take-up reel, an elevator assembly and a helical deck arranged in a substantially linear configuration on a chassis. This form factor defines the invention."

It is the Examiner's position that objective evidence of nonobviousness including commercial success must be commensurate in scope with the claims. *In re Tiffin*, 448 F.2d 791, 171 USPQ 294 (CCPA 1971). In order to be commensurate in scope with the claims, the commercial success must be due to claimed features, and not due to unclaimed features. *Joy Technologies Inc. v. Manbeck*, 751 F. Supp. 255, 17 USPQ2d 1257, 1260 (D.D.C. 1990), aff'd, 959 F.2d 226, 22 USPQ2d 1153, 1156 (Fed. Cir. 1992). "Form factor" has a known definition in the art (i.e. a three dimensional space). For example: a DAT changer that has a 5¼" form factor is a DAT changer that fits in the same three dimensional space that normally holds a 5¼" disk drive. The commercial success of Appellants' invention is seen to be due to

the 4400 automated cartridge system (ACS), which previously had a total capacity of 1.2 terabytes, now having a total storage capacity of 150 terabytes. In otherwords, the storage capacity of the 4400 ACS was increased without increasing the size of the 4400 ACS. This is due to the helical scan transport apparatus of the present invention occupying the same three dimensional space as the previous transport apparatus (i.e. having the same *form factor*). The claims on the otherhand (i.e. claims 1, 3, 4, 9, 11 and 12), do not recite the dimensions of the helical scan transport nor do they specify the amount of space that the helical scan transport occupies. Therefore, the helical scan transport could be any size. Clearly, a data storage system could be built of any size that has a storage capacity of 150 terabytes. Appellants' invention, however, has the advantage of a data storage system that now has the capacity of 150 terabytes with the same dimensions (*i.e. form factor*) as the previous 1.2 terabyte 4400 ACS. Finally, even Appellants define form factor as "physical dimensions and layout". See Declaration, page 1, paragraph 4. Therefore, claims 1, 3, 4, 9, 11 and 12 are not seen to recite the underlying features that result in the greater storage density and the evidence of commercial success is not seen to be commensurate in scope with the claims.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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December 19, 1996

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